

Knowledge and Attitude towards Cervical Cancer Screening among Women attending a Selected Hospital in Dhaka, Bangladesh

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Abstract

Background: Cancer profoundly impacts women's quality of life across various dimensions, including physical, psychological, and social aspects. Assessing women's knowledge and practices is essential to emphasize how crucial community-based strategies are for lowering stigma and motivating women to prioritize their reproductive health. Policymakers might utilize the study's results to create focused awareness campaigns and instructional initiatives.

Objective: The study aims to assess the Knowledge and Attitude towards Cervical Cancer Screening among Women attending a Selected Hospital in Dhaka, Bangladesh

Methods: A cross-sectional study design was used. A total of 296 participants were recruited using a convenience sampling technique from Shaheed Suhrawardy Medical College Hospital, Dhaka, Bangladesh. The researcher collected data through a semi-structured questionnaire. The questionnaire includes three parts: Part I, the socio-demographic questionnaire (8 items), Part II: Knowledge Related Questionnaire (10 items), and Part III: Attitude Related Questionnaire (10 items). Data were analyzed by using descriptive (mean, standard deviation, frequency, and percentage) and inferential statistics (t-test, ANOVA, and Pearson correlation test). Data were analyzed using SPSS version 26, employing descriptive and inferential statistics (t-test, ANOVA, Pearson correlation) with a significance level of $p < 0.05$.

Result: The study finding showed that the mean age of the participants was (30.07 ± 6.44) . According to the findings, it was shown that most of the 84.1% of participants had a good knowledge, and 79.7% of participants had a Positive attitude towards cervical cancer screening among women. Knowledge and attitude toward cervical cancer screening were significantly influenced by religion, marital status, education, occupation, income, and having children, while age and residential status showed no significant association.

Conclusion: The study concludes that although most women possess good knowledge and positive attitudes towards cervical cancer screening, socio-demographic disparities still influence awareness and participation. Targeted education programs and nationwide screening initiatives are recommended to enhance screening uptake and reduce cervical cancer burden in Bangladesh.

Keywords: Cervical Cancer, Screening, Knowledge, Attitude, Bangladesh

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I. Introduction

Cervical cancer is a major public health concern worldwide, especially affecting women of reproductive age. It typically starts in the squamous cells of the cervix's transformation zone and is strongly associated with persistent infection from high-risk human papillomavirus (HPV) strains [1]. The development of cervical cancer involves multiple stages influenced by oncogenic HPV infection, genetic mutations, epigenetic changes, and the presence of cancer stem cells. Additionally, the cervico-vaginal microbiome and cervical microenvironment are important in HPV clearance and the regulation of immune responses [2].

According to the World Health Organization (WHO), cervical cancer ranks as the fourth most common cancer among women, with an estimated 660,000 new cases and approximately 350,000 deaths worldwide in 2022 [3]. Alarmingly, every two minutes, one woman dies from cervical cancer globally [4]. About 94% of cervical cancer-related deaths occur in low- and middle-income countries due to limited access to screening and preventive care (3).

It remains a leading cause of cancer mortality in resource-constrained nations, accounting for around 311,000 deaths annually and representing 7.9% of all female cancer cases worldwide [5].

The highest cervical cancer incidence and mortality rates are found in South-East Asia, Central America, and Sub-Saharan Africa (4). In Africa, nearly 95% of women are diagnosed at late or terminal stages of the disease, largely due to limited awareness, inadequate screening, and socio-cultural barriers [6]. For instance, Zimbabwe reports approximately 2,270 new cases and 1,451 deaths annually [7]. In Ethiopia, around 4.7% of women in the general population harbor HPV-16 or HPV-18, which contribute to nearly 68% of invasive cervical malignancies [8].

In Bangladesh, approximately 64 million women of reproductive age are at risk of developing cervical cancer, which stands as the second leading cause of cancer-related deaths among women [9,10]. The prevalence of cervical cancer among screened women is around 1.18%, with women over 40 years and those with chronic illnesses being particularly vulnerable [11]. Despite relatively low prevalence compared to other regions, the burden remains high due to inadequate screening coverage, lack of awareness, and socio-cultural constraints [11]. Several sociodemographic and psychosocial factors influence participation in cervical cancer screening. Women aged 45 years and older, those with higher education, and those in stable relationships are more likely to undergo screening [12,13]. Cultural attitudes, self-efficacy, and economic status also play critical roles in shaping screening behaviors [14]. Rural women, in particular, face logistical barriers that limit access to screening facilities [15]. Furthermore, misconceptions about screening procedures, fear, and perceived cost discourage participation [16]. A large proportion of women remain unaware of screening programs or cervical self-examination. A study found that 91.5% of participants were unaware of cervical self-examination, while 74.5% had never heard of screening programs [17]. Although most women expressed willingness to recommend screening to others, only a small proportion had been screened [17,18]. Educational interventions have effectively enhanced knowledge, attitudes, and screening uptake [18].

Cervical cancer profoundly affects women's quality of life across physical, psychological, and social domains. Survivors often experience sexual dysfunction, emotional distress, and social isolation, which may persist long after treatment [19]. Fatigue, pain, and reduced well-being are common compared to women without gynecological conditions [20]. In low-resource settings such as India, cervical cancer accounts for 77,000 annual deaths, representing nearly one-fourth of global cervical cancer mortality [21].

Given the high burden and preventable nature of cervical cancer, understanding the knowledge, attitudes, and barriers to screening among women is critical. Such insights are vital for developing culturally sensitive and community-based health education strategies. Identifying misconceptions, obstacles, and knowledge gaps related to cervical cancer screening in Bangladesh provides evidence to guide policymakers in designing effective awareness and prevention programs. The study aims to assess the level of knowledge and attitude towards cervical cancer screening among women attending a selected hospital in Dhaka, Bangladesh.

II. Materials and Methods

Research Design: An Analytical cross-sectional descriptive study design was used to assess the level of knowledge and attitude toward cervical cancer screening.

Study Setting: The study was conducted at Shaheed Suhrawardy Medical College Hospital, a tertiary-level hospital in Dhaka, Bangladesh.

Study Period: January 2025 to June 2025.

Study Population: Women of reproductive age 15–45 years attending the outpatient and gynecology units of the hospital.

Sample Size: Total of 296 participants.

Sampling Technique: Non-probability convenience sampling method was used for the selection of the sample.

Inclusion Criteria: Women aged 15–45 years who gave consent and were present during data collection.

Exclusion Criteria: Women who were critically ill or unwilling to participate.

Data Collection Instrument: A semi-structured questionnaire with three sections:

- **Socio-demographic information:** It includes information regarding each participant's age, religion, and marital status, level of education, occupation, monthly family income, and children and living status.
- **Knowledge-related questions (10 items):** A score of "1" was given for the correct answer and "0" for the incorrect answer. The total score ranged from 0-10, and then it will be converted into a percentage.

The higher scores indicated a higher level of knowledge. A score of 6-10 was considered good knowledge, and obtain score of 0-5 was considered poor knowledge.

- **Attitude-related statements (10 items, 5-point Likert scale):** The questionnaire included positive and negative item questions. Item number 4 is a negative question, and the rest of them were positive questions. The scores of negative items were reversed. Obtain a score of 6-10, considered a positive attitude, and an obtain score of 11-30 was considered a negative attitude.

Validity: The content validity of the instrument was measured by 3 experts. The necessary modifications were made according to the experts' suggestions.

Reliability: Cronbach's Alpha is 0.86, indicating high internal consistency.

Translation Process: A back translation process (Burns & Grove, 2013) was used for the translation of the instrument. The original questionnaire was developed in English and translated from English to Bengali by a bilingual translator. The second bilingual translator translates the Bengali version into the English version questionnaire to ensure the equivalence of the two versions. Revision of the instrument was continued until consensus was met.

Data Collection Procedure: Data were collected by a semi-structured questionnaire through face-to-face interviews after obtaining informed consent.

Data Analysis:

- **Descriptive statistics:** Frequency, percentage, mean, and standard deviation were used to measure the socio-demographic characteristics of the participants and major variables.
- **Inferential statistics:** Pearson correlation, t-test, and ANOVA were used to examine the relationship between knowledge and attitude towards cervical cancer screening among women attending selected hospitals in Dhaka, Bangladesh. Significance level is $p < 0.05$.

Ethical Consideration: Approval obtained from the Ethical Review Committee of Grameen Caledonian College of Nursing. Confidentiality and informed consent were maintained.

III. Result

Table 1 shows that the mean age of 30.07 years (SD ± 6.44), ranging from 16 to 45 years. More than half (57.4%) were Muslim, followed by Hindu (37.5%) and Christian (5.1%). The majority were married (61.8%), while 30.1% were single, and a few were divorced or widowed (4.1% each). In terms of education, 50.7% had completed secondary education, 17.9% primary, 16.2% other forms of education, and 15.2% had no formal education. Most participants were homemakers (69.6%), followed by students (27.7%), and employed women (2.7%). The mean monthly family income was BDT 22,614.86 (SD $\pm 12,702.34$), ranging from 5,000 to 80,000 taka. Among the respondents, 65.5% had children, while a very small proportion (0.13%) had none. Regarding residence, 51% came from rural areas and 49% from urban settings.

Table 1: Distribution of the socio-demographic characteristics of the participants (n = 296)

Variables	Categories	Frequencies (n)	Percentage (%)	Mean $\pm$ SD
Age (years) Minimum=16 Maximum= 45	16-25	102	34.46	30.07 $\pm$ 6.44
	26-35	79	26.69	
	36-45	115	38.85	
Religion	Muslim	170	57.4	
	Hindu	111	37.5	
	Christian	15	5.1	
Marital Status	Single	89	30.1	
	Married	183	61.8	
	Divorced	12	4.1	
	Widowed	12	4.1	
Level of Education	No formal education	45	15.2	
	Primary education	53	17.9	
	Secondary education	150	50.7	
	Other	48	16.2	
Occupation	Homemaker	206	69.6	
	Employed	8	2.7	
	Student	82	27.7	
Monthly Family Income (Taka) Minimum=5000	5000-23000	58	19.59	22614.86 $\pm$ 12702.34
	24000-43000	90	30.40	
	44000-63000	62	20.94	

Maximum= 80000	64000-80000	86	29.05
Do you have children?	Yes	194	65.5
	No	13	4.39
Residential status	Urban area	145	49.0
	Rural area	151	51.0

Table 2 presents participants' responses to individual knowledge items. The overall mean knowledge score was 7.66 (SD ± 3.87), indicating a moderate level of knowledge among women. The highest mean score was for the item "A healthy lifestyle helps in preventing cervical cancer" (Mean = 2.94), showing good awareness of preventive behaviors. Lower mean scores were observed for items such as "Major risk factors for cervical cancer" (Mean = 0.53), "Common screening method" (Mean = 0.62), and "Age group of women at higher risk" (Mean = 0.93), reflecting limited understanding of specific medical aspects.

Table 2: Distribution of the Knowledge towards cervical cancer screening among women (n = 296)

Sl. No.	Name of items	Don't know (%)	Known (%)	Mean $\pm$ SD
1	What is cervical cancer?	21(7.1)	275(92.9)	.93 $\pm$.26
2	What is the primary cause of cervical cancer?	74(25.0)	222(75.0)	.75 $\pm$.43
3	Which of the following is a major risk factor for cervical cancer?	140(47.3)	156(52.7)	.53 $\pm$.50
4	What are the common symptoms of cervical cancer?	120(40.5)	176(59.5)	.59 $\pm$.49
5	How is HPV transmitted?	92(31.1)	204(68.9)	.69 $\pm$.46
6	Which age group of women is at a higher risk of developing cervical cancer?	24(8.1)	272(91.9)	.92 $\pm$.27
7	What is the main purpose of cervical cancer screening?	38(12.8)	258(87.2)	.87 $\pm$.34
8	How often should women undergo cervical cancer screening?	51(17.2)	245(82.8)	.83 $\pm$.38
9	Which of the following is a common screening method for cervical cancer?	112(37.8)	184(62.2)	.62 $\pm$.49
10	How can a healthy lifestyle help in preventing cervical cancer?	20(6.8)	276(93.2)	.93 $\pm$.25
The total mean score of Knowledge towards cervical cancer screening among women				7.66 $\pm$ 3.87

Table 3 illustrates participants' responses to attitude-related items. The overall mean attitude score was 34.47 (SD ± 10.09), indicating a generally positive attitude toward cervical cancer screening. The highest mean responses were observed for statements such as "Cervical cancer screening is important for women's health" (Mean = 3.80) and "Willing to undergo screening if recommended by a healthcare provider" (Mean = 3.69), reflecting strong acceptance of screening importance and provider influence. However, lower mean scores for items like "Cancer screening is necessary even without symptoms" (Mean = 3.04) and "Cervical cancer screening is too expensive" (Mean = 3.14) suggest lingering misconceptions and perceived financial barriers among some participants.

Table 3: Distribution of Attitudes towards Cervical Cancer Screening (n = 296)

Sl. No.	Name of Items	Strongly Agree n (%)	Agree n (%)	Neither agree nor disagree n (%)	Disagree n (%)	Strongly Disagree n (%)	Mean $\pm$ SD
1	Cervical cancer screening is important for women's health.	111(37.5)	130(43.9)	43(14.5)	12(4.1)	-	4.15 $\pm$.81
2	Cervical cancer screening is an effective way to prevent cancer.	7(2.2)	131(41.6)	136(43.2)	14(4.4)	8(2.5)	3.39 $\pm$.74
3	Cancer screening is necessary even without symptoms.	47(14.9)	60(19.0)	52(16.5)	131(41.6)	6(1.9)	3.04 $\pm$ 1.17
4	Cervical cancer screening is a routine health check that all women should have.	29(9.2)	90(28.6)	110(34.9)	51(16.2)	16(5.1)	3.22 $\pm$ 1.02
5	Willing to overcome any barriers to get cervical cancer screening.	47(14.9)	107(34.0)	98(31.1)	42(13.3)	2(.6)	3.52 $\pm$.95

6	Cervical cancer screening is too expensive.	25(8.4)	82(27.7)	97(32.8)	92(31.1)	-	3.14 ± .95
7	Cervical cancer screening is a waste of time.	44(14.0)	68(21.6)	94(29.8)	71(22.5)	19(6.0)	3.16 ± 1.14
8	Cervical cancer screening is embarrassing.	64(20.3)	92(29.2)	46(14.6)	75(23.8)	19(6.0)	3.36 ± 1.25
9	willing to undergo cervical cancer screening if recommended by a healthcare provider.	72(22.9)	97(30.8)	93(29.5)	32(10.2)	2(.6)	3.69 ± .98
10	Cervical cancer screening is a private matter.	89(28.3)	118(37.5)	29(9.2)	60(19.0)	-	3.80 ± 1.08
The total mean score of Attitudes towards Cervical Cancer Screening							34.47±10.09

Table 4 shows that 84.1% of women had good knowledge, while 15.9% demonstrated poor knowledge regarding cervical cancer screening. This indicates that the majority of respondents were well-informed about cervical cancer prevention and screening practices.

Table 4: Distribution of the level of knowledge towards cervical cancer screening among women (n = 296)

Level of knowledge	Frequency (n)	Percentage (%)
Poor knowledge	47	15.9
Good knowledge	249	84.1

Table 5 shows that 79.7% of women had a positive attitude, while 20.3% exhibited a negative attitude toward cervical cancer screening. This indicates that the majority of respondents held favorable perceptions and willingness toward screening practices.

Table 5: Distribution of the level of attitude towards cervical cancer screening among women (n = 296)

Level of attitude	Frequency (n)	Percentage (%)
Negative attitude	60	20.3
Positive attitude	236	79.7

Table 6 shows significant differences in knowledge scores across religion ($F = 6.704$, $p = 0.001$), marital status ($F = 7.339$, $p = 0.000$), education level ($F = 8.813$, $p = 0.000$), occupation ($F = 9.513$, $p = 0.000$), monthly income ($r = -0.216$, $p = 0.000$), and having children ($t = -3.873$, $p = 0.000$). However, age ($r = -0.096$, $p = 0.10$) and residential status ($t = 1.130$, $p = 0.259$) showed no significant relationship. These findings suggest that knowledge about cervical cancer screening increases with educational attainment and varies across marital and occupational groups, while age and residence have little influence. The findings revealed significant differences in attitude scores by marital status ($F = 8.652$, $p = 0.000$), education level ($F = 32.316$, $p = 0.000$), monthly income ($r = 0.321$, $p = 0.000$), and having children ($t = 3.184$, $p = 0.002$). However, age ($r = -0.013$, $p = 0.82$), religion ($F = 1.198$, $p = 0.303$), occupation ($F = 1.655$, $p = 0.193$), and residential status ($t = 0.462$, $p = 0.645$) were not significantly associated. These results indicate that women's attitudes toward cervical cancer screening are strongly influenced by their marital status, education, and income, while age, religion, and residence play minimal roles.

Table 6: Relationship between socio-demographic characteristics, knowledge, and attitude towards cervical cancer screening among women (n = 296)

Variables	Categories	Knowledge			Attitude		
		Mean ± SD	r/t/F	p-value	Mean ± SD	r/t/F	p-value
Age (years)			-.096	.10		-.013	.82
Religion	Muslim	7.68±1.91	6.70	.001	34.52±5.06	1.20	.303
	Hindu	7.41±2.01			34.64±4.65		
	Christian	9.33±.98			32.53±6.64		
Marital Status	Single	8.35±1.56	7.34	.000	32.57±4.21	8.65	.000
	Married	7.30±2.12			35.56±4.74		

	Divorced	7.17±1.03			32.17±7.21		
	Widowed	8.58±.515			34.08±7.14		
Level of Education	No formal education	7.24±2.11	8.81	.000	29.20±5.16	32.32	.000
	Primary education	8.72±1.62			35.62±3.34		
	Secondary education	7.65±2.10			34.58±4.62		
	Other	6.92±.99			37.75±3.58		
Occupation	Homemaker	7.46±2.12	9.51	.000	34.70±5.21	1.66	.193
	Employed	6.00±.00			36.13±.35		
	Student	8.34±1.31			33.70±4.63		
Monthly Family Income (Taka)			-21	.000		.32	.000
Having Children	Yes	7.35±2.06	-3.87	.000	35.12±5.29	3.18	.002
	No	8.25±1.58			33.21±4.15		
Residential status	Urban area	7.79±2.15	1.13	.26	34.60±4.69	.46	.645
	Rural area	7.54±1.75			34.33±5.30		

IV. Discussion

This study assessed the level of knowledge and attitude towards cervical cancer screening among women attending selected hospitals in Dhaka, Bangladesh. Understanding women's awareness and perceptions of cervical cancer screening is vital for improving participation rates and reducing cervical cancer incidence and mortality. The discussion below highlights the findings in relation to existing literature.

In the present study, the mean age of participants was 30.07 years, which is consistent with the findings of a similar study conducted in Nepal, where the average age of participants was 30 years [22]. Increased awareness and understanding of cervical cancer were associated with more positive attitudes and higher screening uptake, a relationship supported by previous research emphasizing that enhanced knowledge leads to preventive health behaviors [23].

The results revealed that the majority of women (84.1%) had good knowledge, while only 15.9% demonstrated poor knowledge regarding cervical cancer screening. This finding aligns with studies conducted in Africa and Asia, which reported high awareness levels among women following targeted education campaigns [24]. However, this result contrasts with findings from Nigeria and Erbil City, where overall knowledge about cervical cancer was found to be low [24,25]. The variation may be attributed to differences in geographical context, educational exposure, and sample size.

The study showed that 79.7% of participants had a positive attitude, whereas 20.3% had a negative attitude toward cervical cancer screening. This is consistent with a study by Shawky (2024), which found similarly favorable attitudes among women in the Middle East [26]). However, this result differs from the findings in Erbil City, where attitudes were less positive [27]. Such discrepancies may result from cultural beliefs, education levels, and access to healthcare information, which influence perceptions about preventive screening.

Interestingly, the current study found a statistically significant negative correlation between knowledge and attitude toward cervical cancer screening. This finding contrasts with the results of Meskiri et al. (2024), who observed a positive association between knowledge and attitude among women in the UAE [28]. The negative relationship in this study might indicate that despite having adequate knowledge, some women hold misconceptions or fears that discourage screening, reflecting the influence of socio-cultural barriers.

In bivariate analysis, six socio-demographic factors—religion, marital status, education, occupation, monthly family income, and having children—were significantly associated with knowledge, while four (marital status, education, income, and having children) were significantly associated with attitude. Marital status was found to have a significant relationship with both knowledge and attitude. Widowed participants had higher knowledge, while married women displayed more positive attitudes toward screening. This finding contrasts with a study in Southern India, where marital status showed no significant influence on screening behavior [29].

Education level exhibited a strong association with both knowledge and attitude, consistent with findings from Nepal (1), suggesting that higher educational attainment enhances awareness and acceptance of screening practices. However, this contradicts results from Oyam District, Uganda, where no significant relationship was observed between education and screening attitudes [30].

Occupation showed a statistically significant association with knowledge but not with attitude, aligning with previous findings from Nepal [23]. Women who were students or employed demonstrated higher knowledge, possibly due to better access to health information and exposure to awareness campaigns.

Monthly family income was significantly associated with both knowledge and attitude. Interestingly, knowledge had a negative correlation with income, while attitude had a positive correlation, indicating that higher-income women might feel less vulnerable to the disease but more favorable toward preventive care. This finding differs from Rijal and Dawadi (2024), who reported no significant relationship between income and screening behavior [23]. Participants who had children demonstrated statistically significant associations with both knowledge and attitude. Women with children had lower knowledge but higher positive attitudes, possibly reflecting their increased contact with healthcare providers during maternal visits.

V. Conclusion

The findings revealed that the majority of participants had good knowledge and a positive attitude toward cervical cancer screening. Significant associations were observed between knowledge and factors such as religion, marital status, education, occupation, monthly family income, and having children, while marital status, education, income, and having children were significantly related to attitude. Although awareness and attitudes were generally favorable, the presence of misconceptions, limited understanding of specific screening methods, and socio-economic disparities remain key barriers to effective prevention. The results emphasize that education, marital status, and income levels play pivotal roles in shaping women's perceptions and behaviors toward screening. Strengthening health education programs, integrating cervical screening into routine maternal and reproductive health services, and addressing socio-cultural and economic barriers are essential to improving screening uptake and reducing cervical cancer morbidity and mortality in Bangladesh.

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